



# Daniel Blackburn

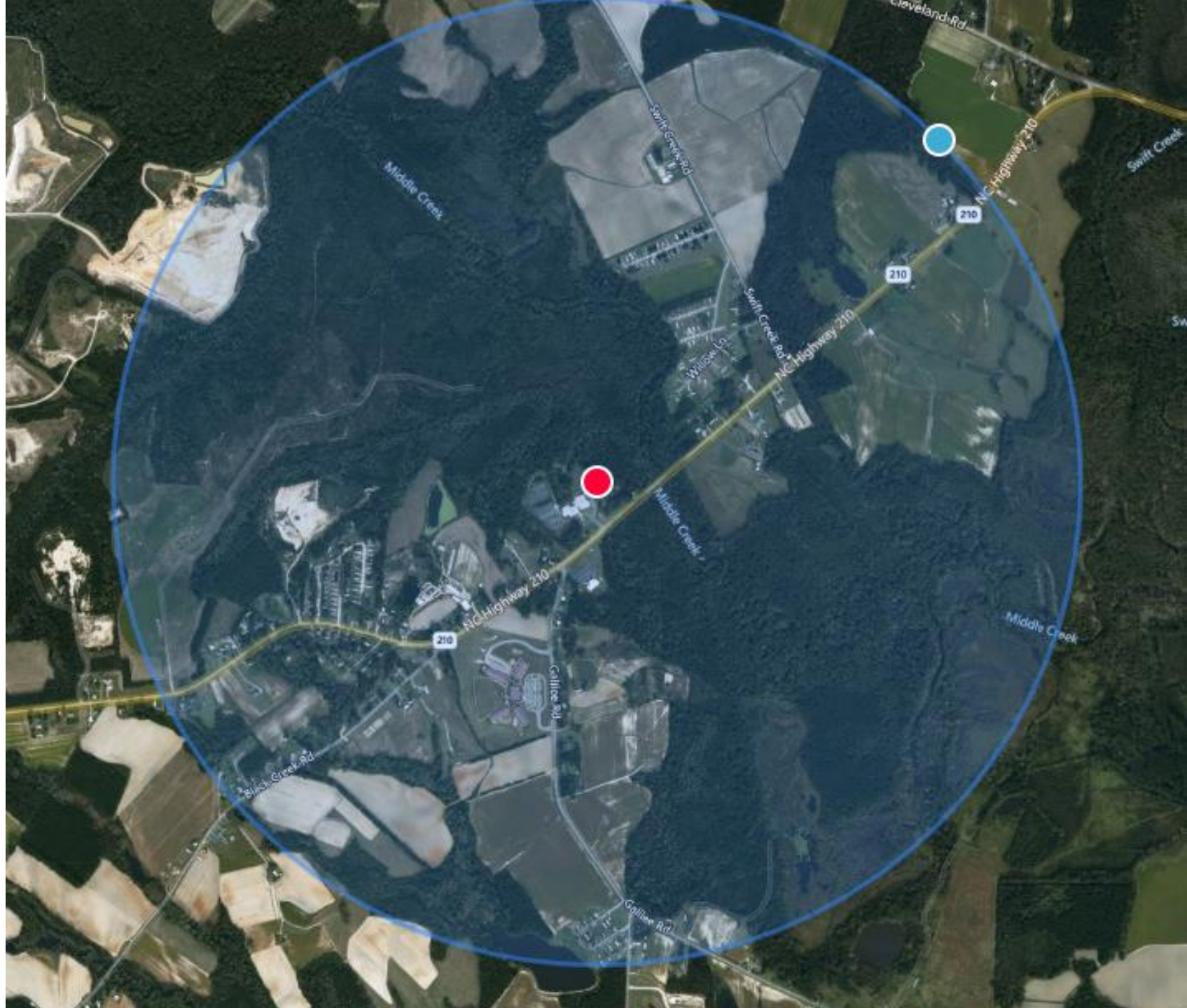
FIA Forester w/ NCFS and 2<sup>nd</sup> year beekeeper



## First Cut Out

**Supposed  
to be  
small,  
was very  
large**

**What  
types of  
land  
cover are  
our bees  
foraging  
in?**



# What does Johnston County's landscape look like?

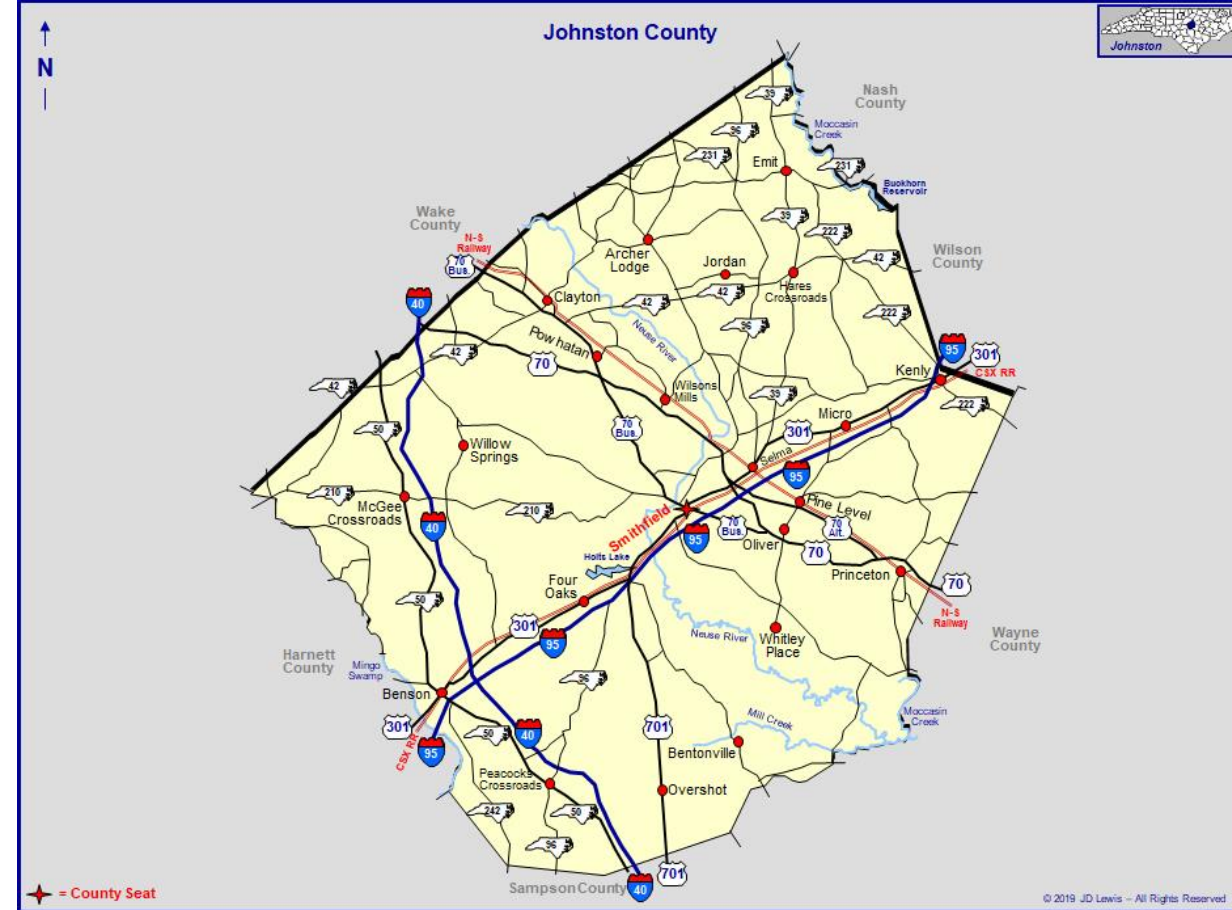
**Forestland= 47.73%**

**Ag Land= 29.42%**

**Urban= 22.38%**

**Water= 0.47%**

**Total Acres 509,440**



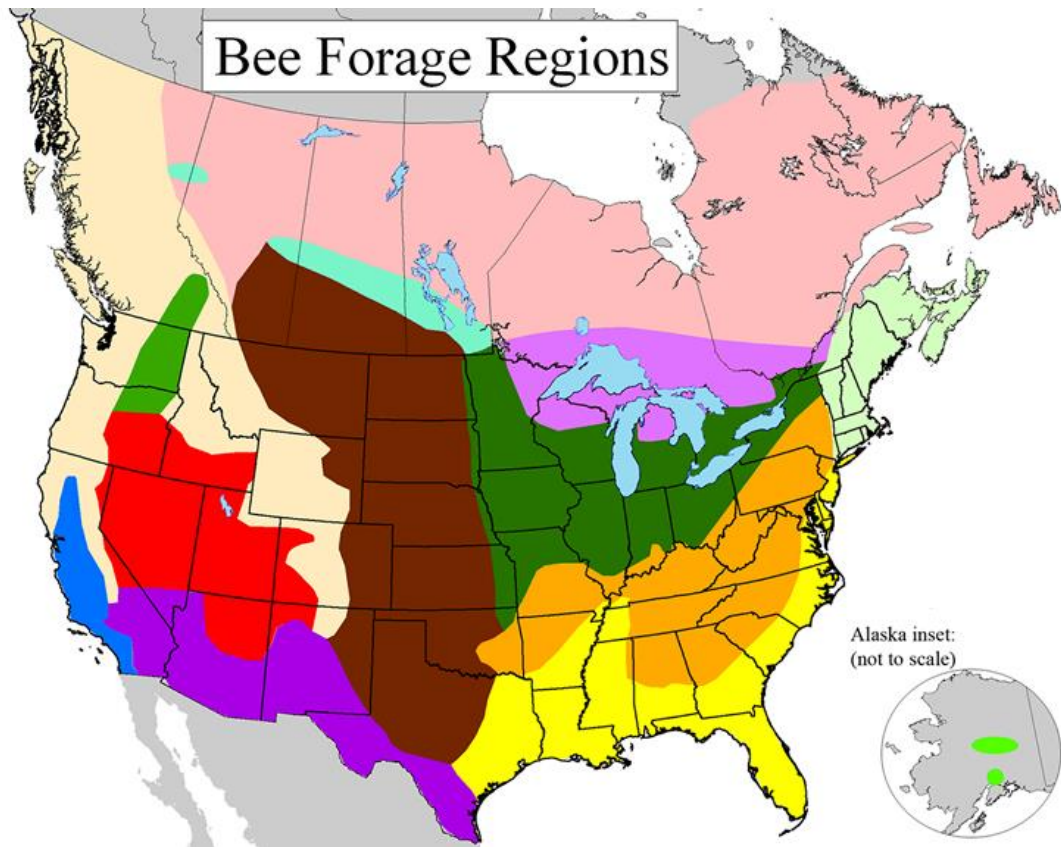
# Landscape Change Over the Past 6 Years

- ▶ **Acres of Forestland now Urban= 7720**
- ▶ **Acres of Ag land now Urban= 6417**
- ▶ **Acres of Ag land now Forestland= 230**
- ▶ **Acres of Forestland now Ag land= 18**
- ▶ **Acres of Forestland now Marsh= 143**



# Nectar Flow Map

<https://honeybeenet.gsfc.nasa.gov/Honeybees/Forage.htm>



## List of Honey Bee Forage Species within Region 11 for the State of NC

Ordered by Begin Bloom Month

[RETURN to map](#)

USDA code	Family	Latin Name	Common Name	Plant Type	Begin Bloom Month	End Bloom Month	Sig
STELL	Caryophyllaceae	<i>Stellaria</i>	Chickweed, stitchwort	F	1	12	N
TAOFC	Asteraceae	<i>Taraxacum</i>	Dandelion, blow-balls	F	2	10	N
VACCI	Ericaceae	<i>Vaccinium</i>	Blueberry, huckleberry	SDB	2	6	N
ACER	Aceraceae	<i>Acer</i>	maple	TDB	2	6	N
ALNUS	Betulaceae	<i>Ainus Mill.</i>	Alder	TDB	2	5	N
PRUNU	Rosaceae	<i>Prunus</i>	Plum (cultivated)	C	3	5	N
VICIA	Fabaceae	<i>Vicia</i>	Vetch, tare	F	3	10	N
RUBUS	Rosaceae	<i>Rubus</i>	Blackberry	S, C	3	6	Y
RUBUS	Rosaceae	<i>Rubus</i>	Blackberry	S, C	3	6	N
CERC12	Fabaceae	<i>Cercis</i>	Redbud, judas tree	TDB	3	5	N
MALUS	Rosaceae	<i>Malus</i>	Apple	TDB	3	5	N
SALIX	Salicaceae	<i>Salix</i>	Willow, osier	TDB	3	6	N
PRAV	Rosaceae	<i>Prunus</i>	Cherry (cultivated)	TDB,C	3	5	N
ILEX	Aquifoliaceae	<i>Ilex</i>	Holly, yaupon	TEB	3	6	Y
FRAGA	Rosaceae	<i>Fragaria_ananassa</i>	Strawberry	F	4	5	N
MELIL	Fabaceae	<i>Melilotus</i>	Sweet clover (white/yellow)	F	4	10	N

# Johnston County Forest Types by Acreage



<b>Total</b>	<b>231,939</b>
<b>Loblolly pine</b>	<b>93,198</b>
<b>Sweetgum / yellow-poplar</b>	<b>39,089</b>
<b>Red maple / lowland</b>	<b>26,742</b>
<b>Loblolly pine / hardwood</b>	<b>20,216</b>
<b>White oak / red oak / hickory</b>	<b>17,952</b>
<b>Yellow-poplar</b>	<b>8,539</b>
<b>Cottonwood / willow</b>	<b>5,696</b>
<b>Baldcypress / water tupelo</b>	<b>5,440</b>
<b>Sweetgum / Nuttall oak / willow oak</b>	<b>5,044</b>
<b>Black ash / American elm / red maple</b>	<b>4,445</b>
<b>Sweetbay / swamp tupelo / red maple</b>	<b>2,966</b>
<b>Mixed upland hardwoods</b>	<b>1,542</b>
<b>Yellow-poplar / white oak / northern red oak</b>	<b>1,070</b>

# What kinds of trees are found in JoCo?

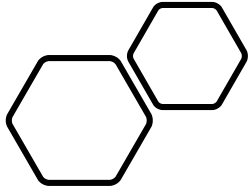
**Around 37% of our trees are direct food sources for honeybees.**



**Some trees are indirect food sources through things like honeydew.**

Total	219,317,864	
loblolly pine	54,631,829	24.91%
sweetgum	43,213,494	19.70%
red maple	33,477,396	15.26%
American holly	16,658,222	7.60%
green ash	11,877,867	5.42%
yellow-poplar	10,928,120	4.98%
water oak	6,613,229	3.02%
sourwood	4,797,737	2.19%
swamp tupelo	4,778,097	2.18%
ironwood	3,484,844	1.59%
common persimmon	2,770,737	1.26%
blackgum	2,682,754	1.22%
black cherry	2,340,864	1.07%
sweetbay	1,886,665	0.86%
river birch	1,835,284	0.84%
white oak	1,792,090	0.82%
pignut hickory	1,776,703	0.81%
cherrybark oak	1,452,512	0.66%
winged elm	1,452,512	0.66%





# Red Maple

- Depending on the weather it normally blooms January-March
- Red Maple makes up about 15% of our JoCo Trees





**American Holly** • Makes up about 8% of our trees

# Yellow-poplar

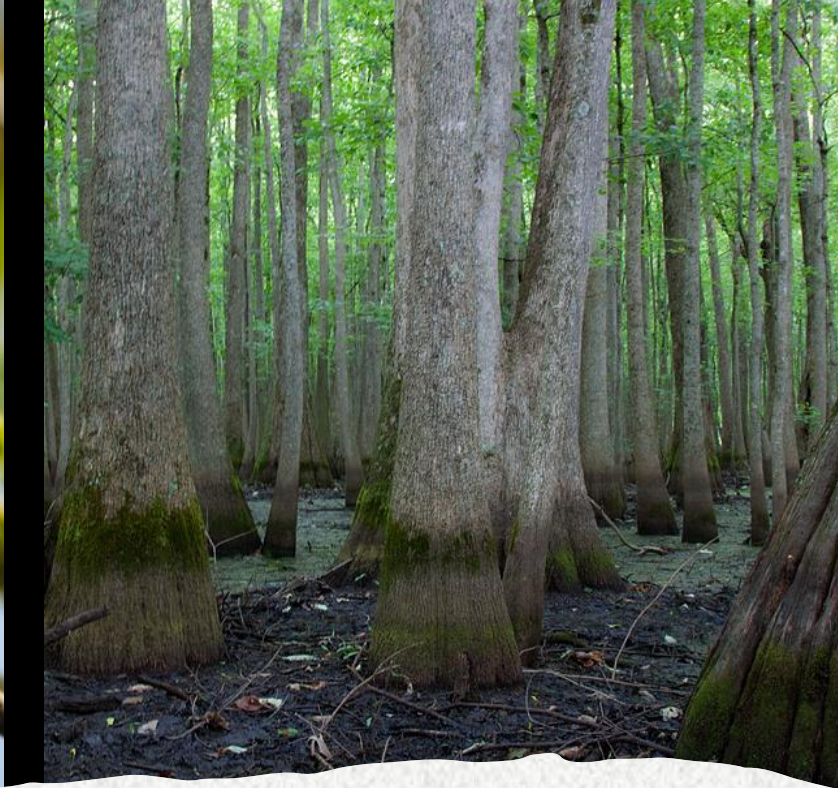
- Makes up about 5% of our trees
- Blooming in Spring from mid-April thru May
- One study found a tree can produce up to 9 lb. of nectar





## **Sourwood**

- **Sourwood honey is a popular honey type in the Foothills and Lower Mountains.**
- **Not really viable in our area. Only makes up around 2% of our trees.**
- **Starting to bloom now.**
- **Leaves are edible.**



## Tupelo and Blackgum

- These trees make up about 3.5% of our trees
- In forest types where they are, they make up a large amount of the total tree numbers
- Tupelo Honey can be made if you are lucky enough to be in the right area



# Black Cherry

- Makes up about 1 % of our trees
- Black Knot is a common disease in these trees and the knots are desired by some wood workers
- Leaves are toxic to animals if they wilt on a broken branch



## Persimmon

- 1) **Dioecious= there are male and female trees**
- 2) **Both male and female flowers are visited by pollinators**
- 3) **Only female trees will bare fruit**
- 4) **Makes up about 1% of our trees**





# Sweetbay

Makes up less than 1%

Leaves have a white underside

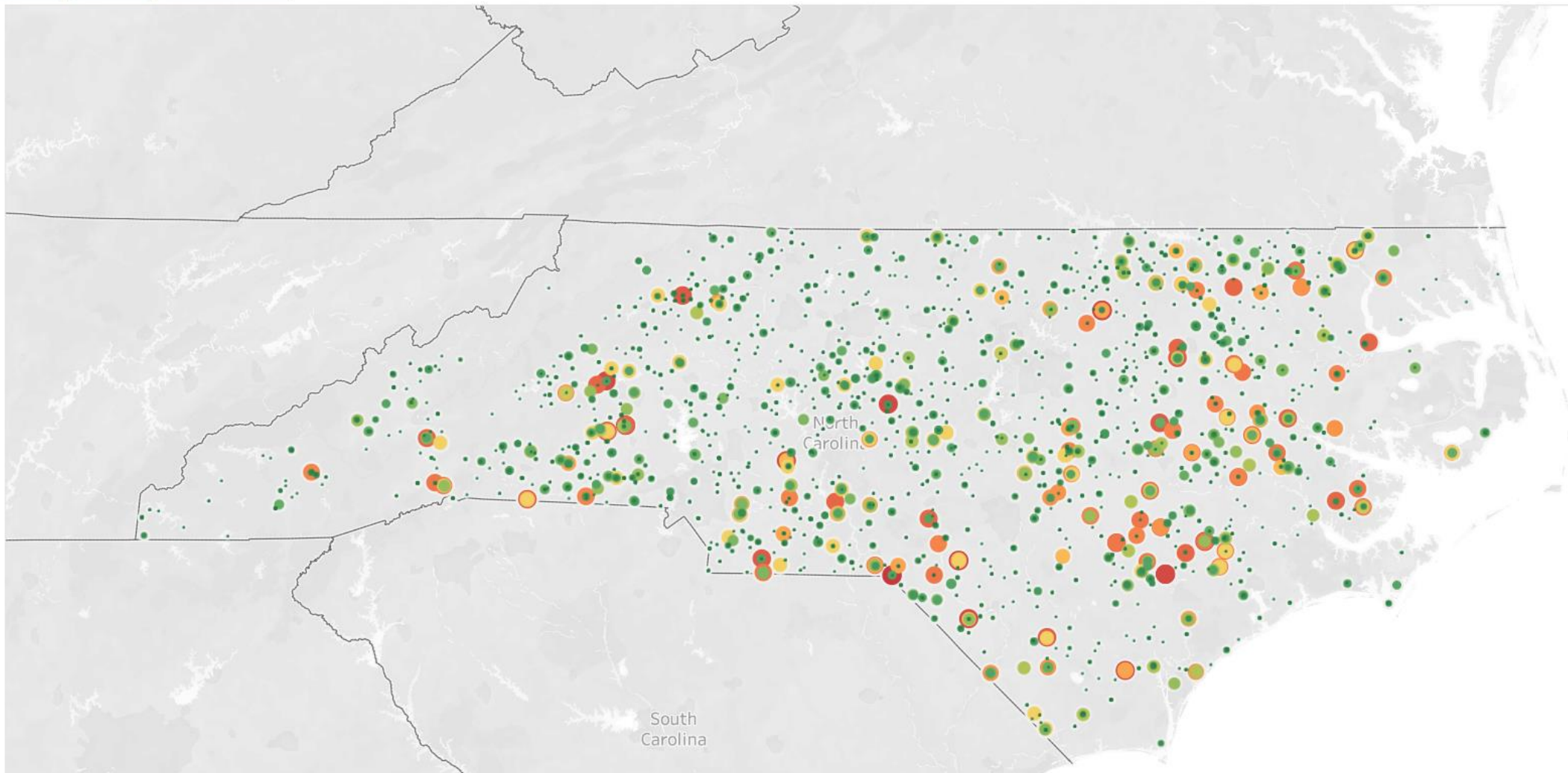





# **Invasive Plants**

USDA  SRS FIA Invasive Location and Count - State

Views ▾ States ▾ Species view



Percent Cover



Percent Cover

- 1
- 20
- 40
- 60
- 80
- 100

Pick Species

LIGUS2 ▾



## Poor Pollinator Habitat

- 1) Too thick with shrubs
- 2) No Sunlight to Forest floor



## Good Pollinator Habitat

- 1) Shrub layer opened up
- 2) Sunlight on Forest floor increasing herbaceous plants

# Managing Forest for Bees

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- Target bee trees if possible but may not be cost effective
- Open up forest canopy thru thinning to get more sunlight to the forest floor. Also generates revenue
- Open up woods by removing dense shrub layer if present through mechanical means or by burning
- If possible, begin a regular burn schedule



# Want a Forest Management Plan?

[www.ncforestsERVICE.gov](http://www.ncforestsERVICE.gov)

## N.C. Forest Service Johnston County

516 County Home Road

Smithfield, NC 27576

- Voice: 919-989-1925
- Fax: 919-989-6172
- Email: [Johnston.ncfs@ncagr.gov](mailto:Johnston.ncfs@ncagr.gov)





**Any  
Questions?**